ABSTRACT

Introduction

There has been trend towards increase in sepsis over the years and sepsis has been rightly termed as a 'hidden public disaster'. As sepsis is associated with increased mortality and morbidity, early recognition and goal directed therapy is imperative. Sepsis and coagulopathy are closely linked. Our study assessed the role of thromboelastography and mean platelet volume as prognostic markers in sepsis.

Aim: To determine whether abnormal thromboelastography and abnormal mean platelet volume is associated with adverse outcome in patients with severe sepsis.

Design: Prospective observational study

Setting: Medical Intensive care unit and high dependency unit of Christian Medical College, Vellore**.**

Patients: 87 adult patients in the ICU/HDU who were admitted with severe sepsis with no clinical bleeding.

Methods: TEG and mean platelet volume were done at admission on the patients who met the inclusion criteria .SOFA scores were calculated at admission. These patients were followed up till their discharge form hospital. The prevalence of abnormal TEG and mean platelet volume in patients were calculated. We assessed whether thromboelastography and mean platelet volume are associated with number and severity of organ dysfunction as assessed by the sequential organ failure assessment (SOFA) score. Similarly the association between an abnormal thromboelastography

and high mean platelet volume, at the time of diagnosis of severe sepsis, on mortality, duration of ICU and hospital stay in patients admitted with severe sepsis was also studied.

Results:.

44%-69% of patients with severe sepsis with no clinical bleeding had a normocoagulable state. 23%-29% of the patients had a hypocoagulable state. These patients were at increased risk of mortality. Patients who did not survive had a prolonged R time (p value: 0.032) and reduced alpha angle (p value: 0.014). In patients who required transfusion of FFPs and platelets all TEG parameters were abnormal (except lysis index) where as patients who required transfusion of cryoprecipitates had abnormal K value, alpha angle and maximum amplitude which was statistically significant. R value showed positive correlation (p: 0.002) with SOFA scores when alpha angle (p: 0.001) and maximum amplitude (p: 0.000) showed negative correlation.Mean platelet volume was significantly low in patients who required transfusion of platelets.

Conclusion:

Majority of patients have a normocoagulable state in early sepsis but patients with hypocoagulable state are at increased risk of mortality. TEG may be used to assess organ dysfunction as R time showed positive correlation and alpha angle and maximum amplitude showed negative correlation with SOFA scores. Patients who required transfusion had abnormal parameters in TEG. Further studies are required to assess whether TEG can be used as guide to transfusion in sepsis

KEY WORDS

Thromboelastography

Severe sepsis

Sepsis induced coagulopathy

Prognostic marker in sepsis